

means for creating a second equipotential surface around said means for creating the first equipotential surface, and

means for separating said first equipotential surface from said second equipotential surface; and

means for setting a resistivity of the means for creating a second equipotential surface to a value in an inclusive range of 10 through 500 ohm\*cm so as to avoid glow discharge and limit eddy current losses--

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#### REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 19-38 are pending, Claim 38 having been amended by way of the present amendment.

In the outstanding Office Action, Claim 38 was rejected under 35 U.S.C §102(b) as being anticipated by Carini et al. (U.S. Patent No. 3,876,462, hereinafter Carini); Claims 19, 22-25, 30-33, 36, and 37 were rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, Jr. et al. (U.S. Patent No. 4,361,723, hereinafter Hvizd); Claims 20 and 21 were rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of Eton et al. (U.S. Patent No. 5,066,881, hereinafter Eton); Claim 26 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of Silver et al. (U.S. Patent No. 4,384,944, hereinafter Silver); Claim 27 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd and Silver, and further in view of

Robert et al. (U.S. Patent No. 5,530,206, hereinafter Robert); Claim 28 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of Yamanouchi et al. (U.S. Patent No. 4,894,284, hereinafter Yamanouchi); Claim 29 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd and Silver, and further in view of Yamanouchi; Claim 34 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of Breitenbach et al. (U.S. Patent No. 4,785,138, hereinafter Breitenbach); and Claim 35 was rejected under 35 U.S.C §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of Simmons et al. (U.S. Patent No. 4,997,995, hereinafter Simmons).

Claim 38 has been amended by way of the present amendment to clarify that the means for setting a resistivity of the means for creating a second equipotential surface sets the resistivity to a value in an inclusive range of 10 through 500 ohm\*cm so as to avoid glow discharge and limit eddy current losses. The amendment to Claim 38 is believed to find support in the specification as originally filed (see, e.g., substitute specification at page 16, lines 4-6), including the claims, and thus adds no new matter.

Claim 38 stands rejected under 35 U.S.C. §102(b) as being anticipated by Carini. Carini is directed to an insulated cable including a copper conductor surrounded by an internal semi-conductive layer, a vulcanized polyethylene layer, and an external semi-conductive layer.<sup>1</sup> Compared with Carini, amended Claim 38 requires that the means for setting a resistivity of the means for creating a second equipotential surface set the resistivity to a value in an inclusive range of 10 through 500 ohm\*cm so as to avoid glow discharge and limit eddy current losses. As recognized by the outstanding Office Action, Carini does not disclose the outermost layer having a resistivity of 10 through 500

ohm\*cm.<sup>2</sup> Accordingly, it is respectfully submitted that Carini does not teach or suggest the resistivity range required by amended Claim 38. Consequently, it is respectfully submitted that Claim 38 patentably defines over Carini.

In the Amendment filed on January 20, 2000, Applicants developed arguments as to why the claimed invention provides unexpectedly good results over the asserted prior art. Those arguments were presented in order to overcome, *inter alia*, rejections made in the Office Action dated October 28, 1999, based on a combination of Simmons and Hvizd. In the subsequent Office Action dated March 15, 2000, those arguments were in large part deemed to be moot in view of the new grounds of rejection. The new ground of rejections, as set forth in the Office Action dated March 15, 2000, include, *inter alia*, rejections based on a combination of Miyauchi et al. (U.S. Patent No. 3,684,821) in view of Hvizd. In response to the Office Action dated March 15, 2000, an Amendment was filed on September 14, 2000. In the Amendment filed on September 14, 2000, Applicants objected to the characterization of their previous arguments as being moot since they were equally applicable to the rejections set forth in the Office Action dated March 15, 2000 as they were to the rejections set forth in the Office Action dated October 28, 1999.

In the outstanding Office Action, aside from the rejection addressed above, the rejections are based on, *inter alia*, a combination of Carini and Hvizd. Again, the Examiner has characterized Applicants' previous arguments as being moot in view of new grounds of rejection.<sup>3</sup> In each of the previous two Office Actions (i.e., Office Actions dated October 28, 1999, and March 15, 2000) the rejections were based on an

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<sup>1</sup> See Carini at column 5, lines 4-9.

<sup>2</sup> See Office Action dated April 24, 2001, at numbered paragraph 4, page 3.

asserted combination of a reference teaching a cable, and Hvizd. In each of those Office Actions, Hvizd was asserted for its teaching of a semi-conductive material having a resistivity in a range of 1 through 1,000,000 ohm\*cm.<sup>4</sup> In the outstanding Office Action, the claims are rejected as being unpatentable over a combination of the cable described in Carini in view of Hvizd. Again, Hvizd is asserted for its teaching of using a semi-conductive material layer having resistivity in the range of 1 through 1,000,000 ohm\*cm.<sup>5</sup> Consistent with Applicants' remarks made in the Amendment filed September 14, 2000, the undersigned objects to the characterization of Applicants' previous arguments as being moot, since again, they are equally applicable to the rejections set forth in the outstanding Office Action. Of particular relevance is the compelling explanation as to why the claimed invention provides unexpectedly good results over the prior art. Consequently, all of the arguments presented in the Amendments filed on September 14, 2000, and January 20, 2000 are incorporated herein by reference.

Independent Claim 19 is directed to an insulated conductor for a high-voltage winding in an electric machine that includes one or more strands, and inner conductive layer, an insulating layer, and an outer conductive layer, where the resistivity of the outer conductive layer is within an inclusive range of 10 through 500 ohm\*cm.

To summarize the arguments presented in the previously filed Amendments, the present inventors have identified that the particular range of 10 through 500 ohm\*cm is a range that enables the use of this particular type of insulated conductor as a winding in a

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<sup>3</sup> See Office Action dated April 24, 2001, at numbered paragraph 12, page 9.

<sup>4</sup> See Office Action dated October 28, 1999 at numbered paragraph 3, page 3, and Office Action dated March 15, 2000, at numbered paragraph 5, pages 4-5.

<sup>5</sup> See Office Action dated April 24, 2001, at numbered paragraph 4, pages 3-4.

high-voltage electric machine.<sup>6</sup> Hvizd, on the other hand, teaches a very broad range, namely, 1 through 1,000,000 ohm\*cm. As was also discussed in the Amendment filed January 20, 2000, Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range.<sup>7</sup> In the case of *In re Woodruf*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), it was established that when ranges overlap one another, Applicants may overcome an obviousness rejection if the particular range is critical. A range can be shown to be critical by showing that the claimed range achieves unexpectedly good results. The present inventors have identified that the particular range of 10 through 500 ohm\*cm is a range that enables the use of this particular type of winding in a high-voltage electric machine.<sup>8</sup>

Accordingly, it is respectfully submitted that independent Claim 19, as well as Claims 22-25, and 30-33, patentably define over a combination of Carini in view of Hvizd. Because independent Claims 36 and 37 require that the outer conductive layer of the insulated conductor have a resistivity in the range of 10 through 500 ohm\*cm, as is required in independent Claim 19, it is respectfully submitted that these claims also patentably define over a combination of Carini and Hvizd.

Claims 20, 21, 26-29, 34, and 35 are each rejected under 35 U.S.C. §103(a) as being unpatentable over Carini in view of Hvizd, and further in view of other tertiary and quaternary references. None of the asserted tertiary and quaternary references cure what is lacking in a combination of Carini and Hvizd, namely, an outer conductive layer of a high-voltage winding having a resistivity in an inclusive range of 10 through 500 ohm\*cm. Accordingly, it is respectfully submitted that Claims 20, 21, 26-29, 34, and 35

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<sup>6</sup> See Amendment filed January 20, 2000, at page 6, second paragraph.

<sup>7</sup> See MPEP §2144.05 Obviousness of Ranges.

patentably define over Carini in view of Hvizd, and further in view of the other asserted references.

Consequently, in view of the present amendment, and in light of the above comments, it is respectfully submitted that the inventions defined by Claims 19-38, as amended, are patentably distinguishing over the prior art. The application is therefore believed to be in condition for formal allowance, and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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<sup>\*</sup> See substitute specification at page 16, lines 4-6.

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IN THE CLAIMS

Please amend Claim 38 as follows:

--38. (Once Amended) An insulated conductor for a high-voltage winding in an electric machine, comprising:

means for conducting an electrical current in said high-voltage winding,

means for electrically insulating said means for conducting, said means for electrically insulating having,

means for creating a first equipotential surface around said means for conducting,

means for creating a second equipotential surface around said means for creating the first equipotential surface, and

means for separating said first equipotential surface from said second equipotential surface; and

means for setting a resistivity of the means for creating a second equipotential surface to a value in an inclusive range of 10 through 500 ohm\*cm so as to avoid glow discharge and limit eddy current losses--